Communications on

PURE AND APPLIED MATHEMATICS

Contents of Volume XLVIII, Nos. 1-12, 1995

NUMBER 1, JANUARY

Uniform Convergence of a Singular Perturbation Problem L. A. Caffarelli and A. Córdoba	1
Parametrices for a Class of Schrödinger Equations	
F. Treves	13
Number 2, February	
On the Exponentially Slow Motion of a Viscous Shock L. G. Reyna and M. J. Ward	79
Schwarz Methods of Neumann-Neumann Type for Three-Dimensional Elliptic Finite Element Problems M. Drvia and O. B. Widlund	121
Stability of Solutions to a Destabilized Hopf Equation	157
B. T. Hayes Inertial Manifolds for Travelling-Wave Solutions of Reaction-Diffusion Systems A. V. Babin	167
NUMBER 3, MARCH	
Adaptive Finite Element Methods for Conservation Laws Based on a Posteriori Error Estimates C. Johnson and A. Szepessy	199
The Relaxation Schemes for Systems of Conservation Laws in Arbitrary Space Dimensions S. Jin and Z. Xin	235

Asymptotics for the Painlevé II Equation P. A. Deift and X. Zhou	277
NUMBER 4, APRIL	
Large Deviations of Interacting Particle Systems in Infinite Volume C. Landim and HT. Yau	339
Non-Recursive Functions, Knots "with Thick Ropes," and Self-Clenching "Thick" Hyperspheres A. Nabutovsky	381
Partial Regularity for Weak Heat Flows into Spheres	501
Y. Chen, J. Li, and FH. Lin	429
On the Existence of Infinitely Many Periodic Solutions to Some Problems	
of n-Body Type P. Majer and S. Terracini	449
Number 5, May	
Symmetry of the Blow-Up Set of a Porous Medium Type Equation C. Gui	471
Nonparabolic Dissipative Systems Modeling the Flow of Liquid Crystals FH. Lin and C. Liu	501
On the Alexandroff-Bakelman-Pucci Estimate and the Reversed Hölder Inequality for Solutions of Elliptic and Parabolic Equations	
X. Cabré	539
Compressible Helical Flows A. Morgulis, V. I. Yudovich, and G. M. Zaslavsky	571
Number 6, June	
Stability Theory for Dissipatively Perturbed Hamiltonian Systems J. H. Maddocks and M. L. Overton	583
Convergence of Vortex Methods for Weak Solutions to the 2-D Euler Equations with Vortex Sheet Data	
JG. Liu and Z. Xin	611

	III
The Abstract Cauchy-Kovalevskaya Theorem in a Weighted Banach Space	
M. V. Safonov	629
Existence and Non-Existence of Radial Solutions for Elliptic Equations with Critical Exponent in \mathbb{R}^2 D. G. De Figueiredo and B. Ruf	620
	639
A Necessary and Sufficient Condition for the Nirenberg Problem W. Chen and C. Li	657
Number 7, July	
NOMBER 1, JULI	
An Existence and Uniqueness Result of a Nonlinear Two-Dimensional Elliptic Boundary Value Problem I. M. Gamba	669
	009
Entropy Flux-Splittings for Hyperbolic Conservation Laws Part I: General Framework	(01
GQ. Chen and P. G. Lefloch	691
On the Location and Profile of Spike-Layer Solutions to Singularly Perturbed Semilinear Dirichlet Problems	721
WM. Ni and J. Wei	731
Number 8, August	
Microlocal Dispersive Smoothing for the Schrödinger Equation	
W. Craig, T. Kappeler, and W. Strauss	769
Instability of Periodic BGK Equilibria	
Y. Guo and W. A. Strauss	861
Number 9/10, September/October	
A SPECIAL DOUBLE ISSUE DEDICATED TO JACK SCHWARTZ	
A SI BOIND DOUBLE ISSUE DEDICATED TO JACK SCHWARTE	
Jack Schwartz	895
Introduction M. Davis, A. Gottlieb, and E. Schonberg	897

5

Verification	
D. Cantone and A. Ferro	901
Interprocedural Analysis and Optimization K. D. Cooper, M. Hall, K. Kennedy, and L. Torczon	947
Upper and Lower Bounds for Recurrent and Recursively Decomposable Parallel Processor-Networks P. de la Torre and C. P. Kruskal	1005
ISETL: A Programming Language for Learning Mathematics E. Dubinsky	1027
Program Derivation With Verified Transformations—A Case Study J. P. Keller and R. Paige	1053
Global Attractivity in a Nonlinear Second-Order Difference Equation V. L. Kocic and G. Ladas	1115
Solvable Set/Hyperset Contexts: I. Some Decision Procedures for the Pure, Finite Case	
E. G. Omodeo and A. Policriti	1123
Bit-Parallel, Free-Space, Optical Communication L. Rudolph	1157
Robot Motion Planning M. Sharir	1173
NUMBER 11, NOVEMBER	
Forced Lattice Vibrations: Part I P. Deift, T. Kriecherbauer, and S. Venakides	1187
Forced Latting Vibrations: Part II	
P. Deift, T. Kriecherbauer, and S. Venakides	1251
Addendum to "Floer Cohomology of Lagrangian Intersections and Pseudo-Holomorphic Discs, I"	
YG. Oh	1299
NUMBER 12, DECEMBER	
Ami Harten	1303
Multiresolution Algorithms for the Numerical Solution of Hyperbolic Conservation Laws	
A. Harten	1305

Morse Indices of Critical Manifolds Generated by Min-Max Methods with Compact Lie Group Actions and Applications G. Fang	1343
Finite Genus Solutions to the Ablowitz-Ladik Equations P. D. Miller, N. M. Ercolani, I. M. Krichever, and C. D. Levermore	1369
Volume Title Page	1441
Author Index	1443
Volume Contents	I